



## ILLUMINATION DEVICE AND PROJECTOR EQUIPPING THE SAME

### BACKGROUND OF THE INVENTION

#### 1. Field of Invention

[0001] The present invention relates to an illumination device including a light-emitting tube and a reflecting mirror to reflect the light emitted from the light-emitting tube, and to a projector using such an illumination device.

#### 2. Description of Related Art

[0002] Illumination devices composed of a light-emitting tube and a reflecting mirror to direct the light emitted from the light-emitting tube in the prescribed direction have been widely used as illumination devices. In such illumination devices, an auxiliary second reflecting mirror have been provided in a position opposite to the aforementioned reflecting mirror so as to sandwich the light-emitting tube, as described in JP-A-8-31382 (page 2, Fig. 1), in order to effectively use the light that was emitted from the light-emitting tube but became a stray light and could not be supplied for use.

### SUMMARY OF THE INVENTION

[0003] However, when the auxiliary second reflecting mirror is mounted on the light-emitting tube so as to surround the periphery of the light-emitting member of the light-emitting tube, the second reflecting mirror acts to reduce heat radiation from the light-emitting tube. Therefore, the problem is that the temperature of the light-emitting tube had a nonuniform distribution and the temperature is greatly increased locally, thereby causing wear of electrodes, opacity and expansion of the light-emitting tube, and shortening of service life of the light-emitting tube.

[0004] The invention was developed to address the aforementioned problems, and in an aspect provides an illumination device including a light-emitting tube, a first reflecting mirror which is the main reflecting mirror for the light emitted from the light-emitting tube, and a transparent plate disposed in the distal end portion of the first reflecting mirror. This illumination device includes the light-emitting tube in which the degradation of service life and reliability caused by the second reflecting mirror can be reduced or prevented even when the second reflecting mirror, which is the auxiliary reflecting mirror, is disposed so as to surround the periphery of the light-emitting member of the light-emitting tube. An aspect of the invention also provides a projector including such an illumination device.

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